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Zijing Pang

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GLOBAL IP SERVICES

7285 W. Eagle Court

Winton, CA 95388

EXAMINER

PILKINGTON, JAMES

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/529,283
Filing Date: March 25, 2005
Appellant(s): PANG, ZIJING

Tianhua Gu
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 16, 2010 appealing from the Office action mailed September 24, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application: Claims 1, 5-9 and 21-31. Appellant is only appealing claims 1, 5-9, 21 and 27.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

3,407,681	Kiernan	1-1967
3,252,349	Widdrington	9-1963

CN 99222132.3, Chinese Patent document dated 6-2000 and attached English translation.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Objections

Claims 22-26, 28 and 29 are objected to for being dependent from canceled claims. For the purpose of examination the following assumptions are being made: Claim 22 should depend from 21, Claim 23 should depend from 22, Claims 24 and 25 should both depend from 23, Claim 26 should depend from 22, and Claims 28 and 29 should both depend from 27.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 26, 30 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation "adapted to turn back" in line 2. It is not clear what Applicant means by the phrase "turn back." Is the bull gear rotated in reverse or by "turn back" does the Applicant mean that the key is being adjusted to move the bull gear away from the rotor?

Claim 30 recites the limitation "the bull gear body" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Widdrington, USP 3,252,349.

Widdrington discloses a device comprising at least two driving units (14 and 15) symmetrically arranged around the driven device (mechanism) for evenly rotating the driven device, wherein each of the driving units (14 and 15) is connected to a frame (13) through a substantially elastic support (11a-11c, everything has an elastic property).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of Kiernan, USP 3,407,681 and further in view of CN 99222132.3.

Widdrington discloses an elastic couple rotor turning gear, characterized in that:

- a substantially elastic support (11a, 11b and 11c, everything has an elastic property) is mounted on a frame (13) of a driven device (device is a drive mechanism)
- a casing (11d, 11e and 18a) with a U-shaped cross section being connected to the substantially elastic support (11a, 11b and 11c) for providing a substantially elastic connection between the frame (13) of the driven device and the elastic couple rotor turning gear
- a casing cover (16) being firmly fixed on the casing (on portion 11d)
- a plurality speed reducer (see left and right of Figure 4 within units 14 and 15) and an each with an electric motor (see Figures 9 and 10, discloses that each drive unit can have its own motor 74 or 66) installed evenly or symmetrically positioned at an angle of 180° (see Figure 4)

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- each speed reducer having an output shaft (20) of the speed reducer (21/22) extending into the casing (11d, 11e and 18a, extends into portion 18a) under the casing cover (16)
- the output shaft having a pinion gear (19) mounted thereon and meshed with a gear body (teeth on 10) of a bull gear (10) positioned in the casing (11d, 11e and 18a), the bull gear being engaged with a shaft coupling (26) and the shaft coupling being fixed on a rotor of the driven device (26 and 27 make the connection to the load, element providing torque resistance)
- wherein the shaft coupling (26) is of an integral type, and the shaft coupling (26) is connected to the rotor of the driven device through a plurality of radial linkages (27)
- wherein an axial sliding clearance (under gear 10, see space on left of Figure 3) and a radial sliding clearance (the radial side of the gear is connected via a bearing 12 which creates a clearance) are formed between the gear body (teeth of 10) of the bull gear (10) positioned inside the casing and the casing (11d, 11e and 18a).

Widdrington does not disclose that the bull gear and the shaft coupling are connected through keys via a key seat or an upright post, wherein an air clearance is formed between an inner round wall of the bull gear and the shaft coupling, and three screws (15) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling, and wherein the bull gear includes a key seat.

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Kiernan teaches a bull gear (2) and a coupling (6) that are connected through keys (pins labeled as 8) via a key seat (hole in 6), wherein an air clearance (between back of 2 and 6) is formed between an inner round wall (back wall) of the bull gear (2) and the shaft coupling (6), and three screws (screws labeled 8) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling and wherein the bull gear (2) includes a key seat (hole for pins and screws 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fixed connection between the shaft coupling and the gear of Widdrington with the keys, screws and key seat coupling of Kiernan since substitution of one attachment with another would achieve the predictable result of connecting the gear to the coupling.

Widdrington in view of Kiernan discloses all of the claimed subject matter as disclosed above.

Widdrington does not disclose that the substantially elastic support includes an upper ring and a lower ring, the upper ring being connected to the lower ring through a plurality of substantially elastic ribs and wherein the plurality of substantially elastic ribs are made of an elastic material and rectangular in cross section.

CN 99222132.3 teaches a substantially elastic support which includes an upper ring (to the right of 4 in Figure 1) and a lower ring (to the left of 4 in Figure 1), the upper ring being connected to the lower ring through a plurality of substantially elastic ribs (at

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4) and wherein the plurality of substantially elastic ribs are made of an elastic material and rectangular in cross section.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the substantially elastic support of CN99222132.3 in place of the substantially elastic support of Widdrington. Substituting the elastic support of Widdrington in view of Kiernan with the rib type elastic support of CN99222132.3 would yield the predictable result of removing rigidity of the device so that it can withstand more of a shock load.

Claims 9, 21-23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of CN 99222132.3.

Widdrington discloses all of the claimed subject matter as discussed above.

Widdrington further discloses:

- wherein the bull gear (10) is connected to a rotor (moving part) of the driven device through a shaft coupling (26)
- each of the drive units (14 and 15) comprises a pinion gear (19) adapted to mesh with a bull gear body (teeth) of a bull gear (10)
- wherein the bull gear is adapted to turn back so as to remove the rotor from an external force (the bull gear can be removed so no force will be on the rotor)
- each of the drive units comprise a casing (18a, see Figure 3a) and a cover (bottom plate in Figure 3a) forming an enclosure accommodating the

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pinion gear (19) and the bull gear body (teeth are inside housing to mesh with pinion)

- wherein an axial sliding clearance (under gear 10, see space on left of Figure 3) and a radial sliding clearance (the radial side of the gear is connected via a bearing 12 which creates a clearance) are formed between the bull gear body (teeth) and the casing (bearing and spacing between connecting teeth allows for sliding clearance in both the radial and axial directions).

Widdrington does not disclose that the substantially elastic support includes an upper ring and a lower ring, the upper ring being connected to the lower ring through a plurality of substantially elastic ribs and wherein casing is connected to the upper ring and the lower ring is connected to the frame.

CN 99222132.3 teaches a substantially elastic support which includes an upper ring (to the right of 4 in Figure 1) and a lower ring (to the left of 4 in Figure 1), the upper ring being connected to the lower ring through a plurality of substantially elastic ribs (at 4) and wherein casing (gear/motor unit) is connected to the upper ring and the lower ring is connected to the frame (7/17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the substantially elastic support of CN99222132.3 in place of the substantially elastic support of Widdrington. Substituting the elastic support of Widdrington with the rib type elastic support of CN99222132.3 would yield the

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predictable result of removing rigidity of the device so that it can withstand more of a shock load.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of CN 99222132.3 and further in view of Kiernan, USP 3,407,681.

Widdrington in view of CN 99222132.3 discloses all of the claimed subject matter as disclosed above.

Widdrington does not disclose that the bull gear and the shaft coupling are connected through keys via a key seat or an upright post and wherein an air clearance is formed between an inner round wall of the bull gear and the shaft coupling, and three screws (15) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling.

Kiernan teaches a bull gear (2) and a coupling (6) that are connected through keys (pins labeled as 8) via a key seat (hole in 6), and wherein an air clearance (between back of 2 and 6) is formed between an inner round wall (back wall) of the bull gear (2) and the shaft coupling (6), and three screws (screws labeled 8) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fixed connection between the shaft coupling and the gear of Widdrington with the keys, screws and key seat coupling of Kiernan since

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substitution of one attachment with another would achieve the predictable result of connecting the gear to the coupling.

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of Kiernan, USP 3,407,681 and further in view of CN 99222132.3.

Widdrington discloses:

- at least two pinion gears (19, one for each motor assembly) symmetrically arranged around the driven device, each adapted to mesh with a bull gear (10), said bull gear (10) being adapted to drive a rotor (rotating device)
- a casing (18a, see Figure 3a) and a casing cover (bottom plate in Figure 3a) forming a housing accommodating the pinion gears (19) and the bull gear body (teeth are inside housing to mesh with pinion)
- a substantially elastic support (11a, 11b and 11c, everything has an elastic property) is mounted on a frame (13) of a driven device (device is a drive mechanism)
- at least two electric motors (see Figures 9 and 10 showing an individual motor for each drive unit/pinion assembly), each driving a corresponding pinion gear through an output shaft of a speed reducer (output of gear train) mounted on the casing cover.

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Widdrington does not disclose that the bull gear and the shaft coupling are connected through keys via a key seat or an upright post, wherein an air clearance is formed between an inner round wall of the bull gear and the shaft coupling, and three screws (15) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling, and wherein the bull gear includes a key seat.

Kiernan teaches a bull gear (2) and a coupling (6) that are connected through keys (pins labeled as 8) via a key seat (hole in 6), wherein an air clearance (between back of 2 and 6) is formed between an inner round wall (back wall) of the bull gear (2) and the shaft coupling (6), and three screws (screws labeled 8) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling and wherein the bull gear (2) includes a key seat (hole for pins and screws 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fixed connection between the shaft coupling and the gear of Widdrington with the keys, screws and key seat coupling of Kiernan since substitution of one attachment with another would achieve the predictable result of connecting the gear to the coupling.

Widdrington does not disclose that the substantially elastic support includes an upper ring and a lower ring, the upper ring being connected to the lower ring through a plurality of substantially elastic ribs and wherein casing is connected to the upper ring and the lower ring is connected to the frame.

CN 99222132.3 teaches a substantially elastic support which includes an upper ring (to the right of 4 in Figure 1) and a lower ring (to the left of 4 in Figure 1), the upper ring being connected to the lower ring through a plurality of substantially elastic ribs (at 4) and wherein casing (gear/motor unit) is connected to the upper ring and the lower ring is connected to the frame (7/17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the substantially elastic support of CN99222132.3 in place of the substantially elastic support of Widdrington. Substituting the elastic support of Widdrington with the rib type elastic support of CN99222132.3 would yield the predictable result of removing rigidity of the device so that it can withstand more of a shock load.

(10) Response to Argument

With respect to the rejection under 35 USC 102(b) of claim 8 in view of Widdrington the Appellant argues that Widdrington fails to disclose: A.) an "elastic support", B.) that the position that "everything has an elastic property" is unreasonable, C.) that a definition or description for what constitutes an "elastic support" is unnecessary in the specification, and D.) that the European application of the instant case has been issued.

Regarding arguments A, B and C, Widdrington does indeed disclose an "elastic support." First, the claim does not establish any particular structure or material to structural define what is meant by the phrase "elastic support." The specification also does not provide any particular guidance for the intent of the limiting nature of the

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phrase "elastic support" as originally filed, if the Appellant intended that phrase "elastic support" to have some particular structure or material this should have been defined in the original filing. Since every material, regardless of shape or size has an elastic property, see any stress-strain curve below the yield point is the elastic region of the material, the broadest reasonable interpretation of the claim is to construe any material as meeting the limitation of "substantially elastic" which makes Widdrington anticipate the claim. Widdrington also does not state that the material used in making the device is rigid. Since the device is not disclosed as rigid any vibration from the motor or movement of the gears would be transmitted through the device in the form of vibrations which is the result of elastic deformation in the material. Figure 1 of Widdrington also shows motor mounting member 11 has four circles or openings in it, these openings act to reduce any rigidity that might be in the mounting member in the same way that the ribs of the instant application remove rigidity from the mount. Since Widdrington discloses a similar concept of removing material in a mounting structure it must be "substantially elastic."

Regarding argument D, the result of the application being issued in Europe does not influence the determination of patentability for a US application.

With respect to the remainder of the claims rejected under 35 USC 103 which rely on a combination of Widdrington, Kiernan, and CN 99222132.3 the Appellant argues that arrangement CN 99222132.3 is not elastic and Kiernan is also silent to an elastic property.

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First, Kiernan is not being relied upon for any elastic property; Kiernan is only relied upon for teaching a keyed connection. Widdrington and CN99222132.3 are relied upon for the mounting member with elastic properties. The position that Widdrington discloses an elastic arrangement is maintained, see argument above. CN 99222132.3 is relied upon for the showing that the mounting structure for the motor can be made with a plurality of ribs (4) which aid in making the mounting structure elastic. Again, the claim does not establish any particular structure or material to structural define what is meant by the phrase "elastic support," and the specification does not provide any particular guidance for the intent of the limiting nature of the phrase "elastic support" as originally filed. Since every material, regardless of shape or size has an elastic property, see any stress-strain curve below the yield point is the elastic region of the material, the broadest reasonable interpretation of the claim is to construe any material as meeting the limitation of "substantially elastic" which makes the arrangement of CN 99222132.3 elastic and a valid teaching for the connection structure used in the mount. CN 99222132.3, like Widdrington, also discloses a similar concept to that of the instant application of removing material in a mounting structure which reduces the rigidity resulting in a mount that must be "substantially elastic."

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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/JAMES PILKINGTON/

Examiner, Art Unit 3656

7/14/10

Conferees:

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3656

/MJ/ Marc Jimenez

TQAS TC 3600